SERVICE-ORIENTED DECISION SUPPORT GOVERNANCE

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Abstract: This paper presents new approaches in service-oriented architecture domain area, focusing on technologies, which would be useful for interoperability among water decision support systems. Present demands on modern Information and Communication Technologies (ICT) infrastructure drive migration from the conventional n-tier systems to a service-oriented computing paradigm, described in terms of service-oriented architecture (SOA), infrastructure, process, and management. Environmental business process orchestration becomes an efficient way of combining security requirements on communication in crisis management structure. Furthermore, we mention how service-oriented portals integrate inflexible heterogeneous systems and thus help enterprises to unlock the functionality of existing legacy applications. Portals can leverage orchestration of underlying middleware components by being the single place where users interact with business processes using a standardized interface. Appropriate communication within the system in environmental decision support system is essential for minimization of disaster effects. Decision support systems finding the optimal strategies are mainly based on artificial intelligence computation technologies, which are extremely computations demanding. That is why we need to design interoperable structure in the context of service based communication. Case study of system structure providing evolution programming computation background for the environmental decision support tasks is presented in the paper.

Keywords: SOA; SOM; ESB; decision support; governance; enterprise portal
1. ICT BACKGROUND FOR DECISION SUPPORT

This paper is focusing mainly on technical background aspect of environmental decision support systems and approaches in service-oriented architecture domain area.

The environmental business process orchestration becomes an efficient way of combining security requirements on communication in crisis management structure. Business process is a way of modeling and monitoring the system behavior, planning the priorities and establishing collaboration between involved systems.

2. NEW TRENDS IN SERVICE-ORIENTED ARCHITECTURE

Service-oriented architecture is an architectural style that utilizes methods providing for enterprises to dynamically communicate software applications between different business partners and platforms by offering generic and reliable services. This way it is possible to develop richer and more advanced applications and information systems (Kubásek, 2007).

Although Service-Oriented Architecture (SOA) is not a new concept, the new developments in this area bring about a new way of constructing software application architectures (Figure 1).

Enterprise portals are often referred to as “the first step to SOA”, which is true also from the Service-Oriented Infrastructure (SOI) perspective. Portals can leverage orchestration of underlying middleware components by being the single place where users interact with business processes using a standardized interface. This approach gains significant advantages of infrastructure services, including increased utilization of individual resources and increased service levels as applications do not depend on the availability of any individual resource.

The ESB principle represents a new way of looking at integration of loosely coupled and highly distributed integration network. An ESB is standardized integration platform for messaging, web services, and data transformation.